IN THE CLAIMS:

1.   (Previously presented) A method of optimizing communication over a high-speed serial bus by minimizing the delay between packets transmitted over the bus, the method comprising:

calculating a maximum round trip delay between a first PHY and a second PHY connected on the bus by pinging;

a bus manager sending a configuration packet to all PHYs connected on the bus, the configuration packet containing a minimum gap_count parameter value, the minimum gap_count parameter value derived from the maximum round trip delay between the first PHY and the second PHY; and

all PHYs connected on the bus sending packets over the bus using the minimum gap _count parameter value as a delay between packets.

2.   (Previously presented) The method of claim 1, further comprising preserving an ack/iso gap between packets, wherein a first PHY sent a most recently-sent packet and a second PHY is responding to the first PHY.

3.   (Previously presented) The method of claim 2, wherein the second PHY is responding with an ack packet.

4.   (Previously presented) The method of claim 2, wherein the second PHY is responding with an isochronous arbitration packet.

5.   (Previously presented) The method of claim 1, wherein the first PHY sends an isochronous packet, observes a subaction gap, and initiates an arbitration indication.

6. (Previously presented) The method of claim 1, wherein the first PHY sends an asynchronous packet, observes an arbitration reset gap, and initiates an arbitration indication.

7. (Previously presented) The method of claim 1, wherein calculating the round trip delay comprises a ping command executed at a link layer level on a node having a first PHY and is directed at a link layer on a node having a second PHY.

8. (Previously presented) The method of claim 7, wherein calculating the round trip delay comprises calculating a round trip delay from a first link on the node having the first PHY and a second link on the node having the second PHY.

9. (Previously presented) The method of claim 1, wherein the second PHY has a subaction gap timeout value that is greater than the IDLE value that can occur within a subaction and an isochronous interval on the high-speed serial bus.

10. (New) A computer-readable medium containing instructions which, when executed by a processor, minimize the delay between packets transmitted over a high-speed serial bus, by:

    calculating a maximum round trip delay between a first PHY and a second PHY connected on the bus by pinging; and

    sending a configuration packet to all PHYs connected on the bus, the configuration packet containing a minimum gap_count parameter value, the minimum gap_count parameter value derived from the maximum round trip delay between the first PHY and the second PHY.